

Listing of Claims

1. (Currently Amended) A system for providing data-triggered workflow management, comprising:

a process definition editing tool to create a process definition of a workflow process using a data-triggered process definition language, wherein the process definition defines activities that are associated with the workflow process, and wherein the process definition includes an activity specification for each activity associated with the workflow process, wherein the activity specification for each activity includes a schedule rule that specifies one or more conditions under which the activity is initiated for execution, but not automatically executed, based on workflow relevant data, independent of control flow dependencies; and

a data triggered workflow engine to generate a process instance of the workflow process from the process definition and manage the execution of the process instance, wherein upon the occurrence of a predetermined event, the data-triggered workflow engine will evaluate the schedule[s] rules based on the workflow relevant data to initiate one or more activities for execution, whereby execution of an initiated activity is at the option of a workflow participant and not automatically executed.

2. (Previously Presented) The system of claim 1, wherein the predetermined event includes modification of workflow-relevant data.

3. (Previously Presented) The system of claim 1, wherein the activity specification for each activity comprises a permitted rule that specifies one or more conditions under which an activity that is not initiated for execution is permitted to be executed at the option of the workflow participant.

4. (Previously Presented) The system of claim 1, wherein the activity specification for each activity comprises an expected rules that specifies one or more conditions under which the activity is expected to be initiated for execution.

5. (Previously Presented) The system of claim 1, wherein the activity specification for each activity comprises an input specification for listing data that the activity can read.

6. (Previously Presented) The system of claim 5, wherein the input specification for each activity further comprises at least one attribute for specifying a manner in which data for an input field of the activity is used.

7. (Previously Presented) The system of claim 1, wherein the activity specification for each activity comprises an output specification for listing data that the activity can produce, modify or overwrite.

8. (Previously Presented) The system of claim 1, wherein the activity specification for each activity comprises a completion state specification for listing at least one type of outcome for the activity.

9. (Previously Presented) The system of claim 1, wherein the activity specification for each activity comprises a resources specification for listing at least one resource that is needed to execute the activity.

10. (Previously Presented) The system of claim 9, wherein when the two or more activities are initiated for execution at a given time, the data-triggered workflow engine evaluates the resources specification of the two or more initiated activities to determine a suggested sequence of executing the two or more initiated activities, whereby an actual sequence of executing the initiated activities is at the option of the workflow participant.

11. (Currently Amended) The system of claim 38, wherein the one or more relations between activities specified by the activity network specification include influence relations, which include ~~such as~~ Precedes and Precedes Back relations.

12. (Previously Presented) The system of claim 1, wherein the activity specification for each activity further comprises an auto-routing specification comprising rules for specifying a data item to copy and a location associated with the activity where to send the copied data item.

13. (Original) The system of claim 12, wherein the auto-routing rules comprise one of a mandatory auto-routing rule, a preferred auto-routing rule, and both.

14. (Original) The system of claim 12, further comprising an auto-routing server for scheduling and managing movement of copied data items.

15. (Original) The system of claim 1, wherein the activity specification further comprises an archive specification for specifying data to be archived and an archive location.

16. (Original) The system of claim 15, further comprising an archive server for copying a data item and sending the copied data item to a specified archive location.

17. (Original) The system of claim 16, wherein the data-triggered workflow engine delays completion of the transaction associated with an activity until notification is received from the archive server that a copying process is complete.

18. (Previously Presented) The system of claim 1, wherein the process definition further comprises a state-based schedule rules specification for supporting both simulation of state-based scheduling and responding to changes to work-flow relevant data by activities which are not initiated for execution.

19. (Previously Presented) The system of claim 18, wherein the state-based schedule rules specification includes an in-out-consistent predicate and a prefix-consistent predicate.

20. (Currently Amended) A computer-implemented method for executing a data-triggered process, comprising the steps of:

generating a process instance from a process definition which defines activities that are associated with the workflow process, wherein the process definition includes an activity specification for each activity associated with the workflow process, wherein the activity specification for each activity includes a schedule rule that specifies one or more conditions

under which the activity is initiated for execution, but not automatically executed, based on workflow relevant data, independent of control flow dependencies; and

upon the occurrence of a predetermined event, evaluating the schedule[s] rules based on the workflow relevant data to initiate one or more activities for execution, whereby execution of an initiated activity is at the option of a workflow participant and not automatically executed.

21. (Canceled)

22. (Previously Presented) The method of claim 20, wherein the predetermined event includes a change of state of an executed activity.

23. (Previously Presented) The method of claim 20, wherein the activity specification for each activity includes a permitted rule that specifies one or more conditions under which an activity that is not initiated for execution is permitted to be executed at the option of the workflow participant, the method further comprising the steps of:

determining if an activity that is not initiated for execution is permitted to be executed based on the activity specifications of the activity, in response to selection of the activity by the workflow participant ; and

executing the selected activity if it is permitted.

24. (Previously Presented) The method of claim 20, wherein the activity specification for each activity comprises an expected rule that specifies one or more conditions under which the activity is expected to be initiated for execution, the method further comprising the steps of:

determining if an activity that is not initiated for execution is expected to be initiated for execution during execution of the process instance based on activity specifications; and
preparing for execution of the activity if it is expected to be executed.

25. (Previously Presented) The method of claim 20, further comprising the step of upon finishing an executed activity, generating a message specifying a state of completion of the activity, recording the state of completion of the activity, and reevaluating schedule rules of activities, if necessary, based on the state of completion.

26. (Previously Presented) The method of claim 20, wherein the activity specification for each activity comprises a resources specification for listing at least one resource that is needed to execute the activity, the method further comprising:

when two or more activities are initiated for execution at a given time, evaluating the resources specification of the two or more activities that are initiated for execution to determine a suggested sequence of executing the two or more initiated activities, whereby an actual sequence of executing the initiated activities is at the option of the workflow participant.

27. (Previously Presented) The method of claim 20, further comprising the step of automatically routing a data item associated with an activity based on the activity specifications of the activity.

28. (Previously Presented) The method of claim 20, further comprising the step of automatically archiving a data item associated with an activity based on the activity specifications of the activity.

29. (Currently Amended) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for executing a data-triggered process, the method steps comprising:

generating a process instance from a process definition which defines activities that are associated with the workflow process, wherein the process definition includes an activity specification for each activity associated with the workflow process, wherein the activity specification for each activity includes a schedule rule that specifies one or more conditions under which the activity is initiated for execution, but not automatically executed, based on workflow relevant data, independent of control flow dependencies; and

upon the occurrence of a predetermined event, evaluating the schedule[s] rules based on the workflow relevant data to initiate one or more activities for execution, whereby execution of an initiated activity is at the option of a workflow participant and not automatically executed.

30. (Canceled)

31. (Previously Presented) The program storage device of claim 29, wherein the predetermined event comprises a change of state of an executed activity.

32. (Previously Presented) The program storage device of claim 29, wherein the activity specification for each activity includes a permitted rule that specifies one or more conditions under which an activity that is not initiated for execution is permitted to be executed at the option of the workflow participant, and further comprising instructions for performing the steps of:

determining if an activity that is not initiated for execution is permitted to be executed based on the activity specifications of the activity, in response to selection of the activity by the workflow participant ; and

executing the selected activity if it is permitted.

33. (Previously Presented) The program storage method of claim 29, wherein the activity specification for each activity comprises an expected rule that specifies one or more conditions under which the activity is expected to be initiated for execution, further comprising instructions for performing the steps of:

determining if an activity that is not initiated for execution is expected to be initiated for execution during execution of the process instance based on activity specifications; and
preparing for execution of the activity if it is expected to be executed.

34. (Previously Presented) The program storage device of claim 29, further comprising instructions for performing the steps of upon finishing an executed activity, generating a message specifying a state of completion of the activity, recording the state of completion of the activity, and reevaluating schedule rules of activities, if necessary, based on the state of completion.

35. (Previously Presented) The program storage device of claim 29, the activity specification for each activity comprises a resources specification for listing at least one resource that is needed to execute the activity, and further comprising instructions for:

when two or more activities are initiated for execution at a given time, evaluating the resources specification of the two or more activities that are initiated for execution to determine a suggested sequence of executing the two or more initiated activities, whereby an actual sequence of executing the initiated activities is at the option of the workflow participant.

36. (Previously Presented) The program storage device of claim 29, further comprising instructions for performing the step of automatically routing a data item associated with an activity based on the activity specifications of the activity.

37. (Previously Presented) The program storage device of claim 29, further comprising instructions for performing the step of automatically archiving a data item associated with an activity based on the activity specifications of the activity.

38. (Previously Presented) The system of claim 1, wherein the process definition further comprises an activity network specification comprising one or more relations between activities which are used to determine a suggested sequence of executing two or more activities that are initiated for execution at a given time, and

wherein when two or more activities are initiated for execution at a given time, the data triggered work flow engine will evaluate the one or more relations between the two or more initiated activities based on the execution state of the process instance to determine a suggested sequence for executing the two or more initiated activities, whereby an actual sequence of executing the initiated activities is at the option of the workflow participant.

39. (Previously Presented) The method of claim 20, wherein the process definition further comprises an activity network specification comprising one or more relations between activities which are used to determine a suggested sequence of executing two or more activities that are initiated for execution at a given time, the method further comprising the step of:

when two or more activities are initiated for execution at a given time, evaluating the one or more relations between the two or more initiated activities based on the execution state of the process instance to determine a suggested sequence for executing the two or more initiated

activities, whereby an actual sequence of executing the initiated activities is at the option of the workflow participant.

40. (Currently Amended) The method of claim 39, wherein the one or more relations between activities specified by the activity network specification include influence relations, which include ~~such as~~ Precedes and Precedes Back relations.

41. (Previously Presented) The program storage device of claim 29, wherein the process definition further comprises an activity network specification comprising one or more relations between activities which are used to determine a suggested sequence of executing two or more activities that are initiated for execution at a given time, the program storage device further comprising instructions for:

when two or more activities are initiated for execution at a given time, evaluating the one or more relations between the two or more initiated activities based on the execution state of the process instance to determine a suggested sequence for executing the two or more initiated activities, whereby an actual sequence of executing the initiated activities is at the option of the workflow participant.

42. (Currently Amended) The program storage device of claim 41, wherein the one or more relations between activities specified by the activity network specification include influence relations, which include ~~such as~~ Precedes and Precedes Back relations.